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THE COLLEGE SUGGESTOR, A DATA RETRIEVAL DEVICE FOR USE AS A GUIDE TO COLLEGE CHOICE, FINAL REPORT.

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*COLLEGES, UNIVERSITIES, JUNIOR COLLEGES, *COLLEGE PLANNING, SYSTEMS DEVELOPMENT, *INFORMATION RETRIEVAL, *GUIDES, *INDIVIDUAL NEEDS, COLLEGE PROGRAMS, HIGHER EDUCATION, INFORMATION DISSEMINATION, INDIVIDUAL CHARACTERISTICS, EVANSTON, ILLINOIS, COLLEGE SUGGESTOR SYSTEM

A UNIQUE DEVICE ("THE COLLEGE SUGGESTOR") WAS DEVELOPED FOR CLASSIFYING FOR INSTANT RETRIEVAL CHARACTERISTIC INFORMATION ON SOME 1,930 JUNIOR COLLEGES, COLLEGES, AND UNIVERSITIES IN THE UNITED STATES AND ITS TERRITORIES. IN USING IT AN INDIVIDUAL WOULD IDENTIFY THOSE INSTITUTIONAL CHARACTERISTICS, CLOSELY RELATED TO HIS PERSONAL ABILITIES, INTERESTS, AND NEEDS. HE COULD ACCOMPLISH THIS UNDER COUNSELOR GUIDANCE OR AS AN INDEPENDENT ACTIVITY. THE INDIVIDUAL WOULD THEN FOLLOW THE FOLLOWING PROCEDURES--(1) SELECT CARDS FROM "THE COLLEGE SUGGESTOR" DESCRIPTIVE OF THE CHARACTERISTICS IN WHICH HE IS INTERESTED, (2) SQUARE OFF THE CHOSEN CARD DECK, (3) HOLD THE DECK AGAINST A LIGHT SOURCE, AND (4) IDENTIFY BY CODE NUMBER THOSE INSTITUTIONS WHICH HAVE THE COMBINED CHARACTERISTICS, PERTAINING TO HIS PREIDENTIFIED INTERESTS. COLLEGE CHARACTERISTICS WERE ORGANIZED INTO THE FOLLOWING CLASSIFICATION--(1) LOCATION, (2) SIZE, (3) CONTROL, (4) PREREQUISITES, (5) ADMISSION INFORMATION, (6) COSTS, (7) FINANCIAL AID, (8) PROGRAM, (9) STUDENT BODY CHARACTERISTICS, (10) FACULTY CHARACTERISTICS, (11) AVAILABLE DEGREE MAJORS, AND (12) AVAILABLE OCCUPATIONAL PROGRAMS. THE DEVICE HAD YET TO BE FIELD TESTED. PLANS AND OBJECTIVES FOR SUCH A TEST PROGRAM WERE DESCRIBED. (REFER TO ACCESSION NUMBERS ED 010 104, ED 010 105, AND ED 010 106 FOR SUPPLEMENTAL DOCUMENTS TO THIS REPORT.) (JH)

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* * * FINAL REPORT * * *

THE COLLEGE SUGGESTOR

A Data Retrieval Device for Use
as a
Guide to College Choice

Department of Health, Education, and Welfare

Office of Education

Project No. X-014
Contract No. OE-6-10-147

Submitted by

NORTHWESTERN UNIVERSITY

with the cooperation of

EDUCATIONAL TESTING SERVICE

Project Director

B. Claude Mathis

* * *

Project No: 5-0608
OE-6-10-147

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A Data Retrieval Device
for Use as a Guide to
College Choice

The Office of Education permits and accepts the following disclaimer clause.

"The prime and subcontractor who participated in the collection and organization of this data disclaim any advocacy as to the value or usefulness of the data or its current (11-21-66), or complete accuracy, at this stage of its development.

Herbert Duffy
Acting Director
Contracts and Construction
Service
U.S. Office of Education
Department of Health,
Education, and Welfare

The development of the College Suggestor, a data retrieval device for use as a guide to college choice, was proposed to the Office of Education during the Spring of 1964 by Northwestern University and the Educational Testing Service. Interest in the development was initiated by the Office of Education through informal conversations between Francis Keppel, then Commissioner of Education, and others on his staff at that time. Northwestern University and the Educational Testing Service submitted a proposal and were funded to accomplish the following objectives:

1. Determine the college and university characteristics which are important to counselors, parents, and students.
2. Collect the desired information about the colleges and universities throughout the United States.
3. Develop one set of reproducible masters of the device which will apply the principle of optical coincidence.
4. Convene an advisory committee to evaluate the activities involved in the development of the prototype and to offer advice and recommendations concerning the use, evaluation, and further development of the College Suggestor.

The narrative which follows delineates the accomplishment of these objectives by presenting 1) an explanation of the retrieval system, 2) a description of the procedures involved in the assemblying of the characteristics, 3) the preparation of the reproducible masters, 4) the proceedings of the meeting of the National Advisory Committee, and 5) the recommendations of this Committee and of the staff personnel involved in the project.

The College Suggestor is a manual optical coincidence, inverted file card sort system. It does not involve the use of machines. The system is made up of transparent plastic cards underprinted with opaque and translucent inks. Each card describes a single characteristic and contains a mark to identify each college with that given characteristic. Each college has the identical grid position in every card. When a college has present within it the characteristic represented by a specific card, a "hole" is placed in the college's position on the card. Thus, a "hole" indicates the presence of a characteristic at a college, and all colleges with a given characteristic are identified by "holes" in that characteristic card.*

To retrieve data from the system, the optical coincidence principal is used. Individual cards are selected by hand representing college characteristics available and of interest. The selected cards are superimposed one on the other. Where "holes" in the cards are coincident, points of light are visible. The optical coincidence which produces points of light constitutes a match of stored information with respect to a search question concerning colleges with given characteristics. These light dots, then, represent colleges having the selected characteristics in common. At the position of the light dots, reference numbers are available. These are used to identify by name the colleges which have been turned up as a result of the search.

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*The organization of information by characteristic rather than by college constitutes inverted filing. Use of "holes" to identify colleges constitutes optical coincidence.

The College Suggestor classifies for instant retrieval information characterizing some 1,931 junior colleges, colleges and universities. The system can be used either through prior planning of college characteristics of interest, or by browsing in order to determine those characteristics which are relevant in a given situation.

In use, a student would identify those characteristics of colleges related to his own abilities, interests and needs. He would do this either under guidance by a counselor or as an independent activity. He selects cards from the College Suggestor descriptive of the characteristics in which he is interested, squares off his deck of cards, holds the deck against a light source, and thereby identifies by code number those colleges which combine all of the characteristics he has identified as of interest to him.

As is implied above, one of the stronger features of optical coincidence is its browsing mode. If the individual turns up too many colleges, he may add additional characteristics cards; if he feels the need for a larger selection of colleges, he may remove cards representing overly restrictive characteristics which are of secondary importance to him.

On having turned up a reasonable number of points of light, he identifies the colleges by name by decoding the numbers surrounding those light spots. On completing this task, he returns the cards he has been working with to the main deck, and the College Suggestor is then ready for its next user.

With a slate of colleges to study in greater detail, then, the student turns to handbooks, guides, and college catalogues in order to learn enough about the respective institutions to narrow down his choices to the very few to which applications for admission and/or placement will be filed.

College characteristics are organized into twelve classifications as follows: location, size, control, prerequisites, admission information, costs, financial aid, program, characteristics of student body, characteristics of faculty, degree majors available, and occupational programs available. The full list of 217 college characteristics appears at Appendix 3.

The developmental activity was initiated with a search of the literature, specifically to ascertain those criteria of college choice which have been found to be significant with respect to decisions reached by or on behalf of the college-bound. Further, individual descriptors of college characteristics were composed and organized into groups such that the total file of information would yield meaningful and significant "profiles" of the colleges. About half of the information on the colleges was in computer files in the United States Office of Education. Duplicate files of these data were assembled. The data were organized on Educational Testing Service computers into the College Suggestor format. One hundred nineteen characteristics in the College Suggestor were processed in this manner. This information, on print-out manifolds, was sent to each institution for verification. In order to collect the remaining information for the College Suggestor, a special Questionnaire was designed. The College Suggestor Questionnaire is shown at Appendix 2. This questionnaire was designed to supply data for the remaining 98 characteristics. An attempt was made in designing this questionnaire to insure that the information asked for was readily available to the respondent. The Director of Admissions was requested to complete the questionnaire. It was pretested by mail, and some admissions officers were interviewed to ascertain their reactions to the questions.

The President of each institution was sent a copy of the questionnaire, so that he would be aware of the project and also to advise him of the information that was being requested from his school. Each questionnaire returned was reviewed for omissions. When omissions were found, a copy of the page containing the omission was returned to the institution with a request for a prompt reply.

A follow-up letter was mailed as a reminder to those who had failed to reply to our original request for filling out the questionnaire. A thank-you letter was sent to each responding institution expressing our appreciation for the time they took to participate in the project.

The questionnaire was sent to 2,154 junior colleges, colleges, and universities in 50 states, Puerto Rico, Guam, and the Panama Canal Zone. The universe represented a modified Higher Education, Part III listing supplied by the Office of Education. As questionnaires were returned, many were discovered which did not belong in the universe represented by the College Suggestor. Graduate schools and seminaries closed to the general public constituted the majority of such institutions. Some schools were no longer operating. One college had even become a high school. The final universe totals 1,931 institutions from a net return of 1,647. A high proportion of those not responding are community junior colleges.

Table I shows the distribution of returned questionnaires by state. Table II shows the schedule followed in the collection of the questionnaire data and the convening of the National Advisory Committee. A list of colleges not responding to the questionnaire is presented at Appendix 4.

Questionnaire returns were key punched into cards, the information through this means was fed into the computers and processed into the College Suggestor format. Ninety-eight characteristics were added to the College Suggestor in this manner.

TABLE I -- RESPONSE TO COLLEGE SUGGESTOR QUESTIONNAIRE

State	Number Responded	Did Not Respond
Alabama	23	4
Alaska	2	1
Arizona	5	1
Arkansas	14	5
California	128	26
Colorado	18	1
Connecticut	22	4
Delaware	4	0
Washington, D. C.	14	2
Florida	37	9
Georgia	42	2
Hawaii	3	1
Idaho	7	1
Illinois	83	8
Indiana	36	1
Iowa	47	4
Kansas	41	3
Kentucky	27	4
Louisiana	17	0
Maine	19	2
Maryland	29	10
Massachusetts	74	13
Michigan	49	7
Minnesota	37	4
Mississippi	29	16
Missouri	42	11
Montana	10	1
Nebraska	20	2
Nevada	1	0
New Hampshire	12	0
New Jersey	26	3
New Mexico	8	1
New York	139	15
North Carolina	48	11
North Dakota	12	2
Ohio	61	1
Oklahoma	28	1
Oregon	22	5
Pennsylvania	97	11
Rhode Island	10	1
South Carolina	25	3
South Dakota	12	3
Tennessee	39	6
Texas	82	11
Utah	6	2
Vermont	15	1
Virginia	37	4
Washington	23	5
West Virginia	17	4
Wisconsin	42	15
Wyoming	5	1
Canal Zone	1	0
Guam	1	0
Puerto Rico	4	1
Virgin Islands	1	0

TABLE II -- COLLEGE SUGGESTOR SCHEDULE

Questionnaire mailed	Last of October - first of November, 1965
Omission letters sent	Through November and December, 1965
Follow-up letter and two-page description sent to 450 colleges	December 3, 1965
Thank-you letter and two-page description sent to 1700 colleges	December 17, 1965
Second follow-up sent to ten "important" colleges who partially filled out questionnaire	January 7, 1966
Invitations sent to Advisory Committee	January 31, 1966
Final thank-you letter to 150 colleges	February 3, 1966

Meeting of Advisory Committee, February 28 - March 1, 1966.

From the characteristics list the graphic arts materials have been prepared. Thus, there is now in existence a reproducible master for an optical coincidence card for each descriptor in the College Suggestor system. These reproducible masters are on file at Northwestern University. The effort involved in the preparation of these reproducible masters has been considerable. The preparation of the masters was staggered throughout the terms of the agreement. Working lists for groups of college characteristics were released for preparation into masters as soon as quality control procedures assured the accuracy of the information coded onto those lists. The preparation of reproducible masters from which optical coincidence cards can be manufactured has been in progress virtually throughout the tenure of the agreement. A photographic reproduction of a College Suggestor card made from a reproducible master is shown at Appendix 7.

Reproducible masters for the 217 college characteristics to be included in the College Suggestor system, along with this report, constitute the end-products of the developmental activity herein described.

Two kinds of "hard copy" lists and a magnetic tape comprise the output of computer processing. A "college list" is organized by college and contains under each college name the characteristic statements built into the system for that particular college. The "characteristics list" is organized by characteristic and contains under each characteristic the code numbers of colleges to which that particular characteristic applies. The latter list has been written to magnetic tape.

Attention is now turned to matters relating to the design of the individual College Suggestor card and of the retrieval system into which the card fits.

Each criterion card is 8 1/2" x 10 3/4", to be fabricated of flexible, sturdy plastic, and to have "holes" and black identifying numbers in black rectangles displayed across the body of the card. The "holes" are to be created by surrounding a spot of clear plastic with colored opaque ink.

Tabs along the top edges of the cards and colored inks in the body of the cards are to be used to enhance the organization of the system and to expedite refiling of the cards after use. A number of "blank" cards will be issued with each set to permit the encoding and introduction into the system of additional college characteristics of interest to counselors for which they themselves will assemble the information to be encoded. They will encode their information by punching holes into the blank cards on which there will be a solid "spread" of colored ink.

The design calls for 217 cards and 3 blank cards to constitute the system; that is, 220 cards in all. These are to be organized in groups of twenty as shown in Appendix 3. All cards will have grids, numbers, and headings printed in black. Each group of twenty cards will be printed in a different second color with eleven hues in all. These are to be organized in groups of twenty as shown in Appendix 3. All cards will have grids, numbers, and headings printed in black. Each group of twenty cards will be printed in a different second color with eleven hues in all. Color differentiation will help make it easier to keep the system in good order. Within each group of twenty, there are to be stepped die cut tabs, serially numbered 1 through 220. The combination of color and tab will assure easy location of a given card and its rapid return to file after use.

The 220 cards together with an instruction sheet and a college code list are to be housed inside a self-supporting box. The container will serve also as a functional work center. Designs for all these components of the system, and for an inexpensive light box to be made locally, have been completed.

For field testing purposes, project personnel are ready at a moment's notice to set into motion the actions necessary to convert these designs into the following manufactured end products.

1. Plastic College Characteristics Sheets - 220 in number.
2. An instruction card printed on plastic stock.
3. A college code list presented on card stock.
4. A self-supporting plastic surface container.

It is contemplated that fewer than 500 sets of the device are to be made to implement field testing objectives (contingent upon the funding of a field test).

That the various characteristics which the College Suggestor proposes to incorporate within the system are important in regulating the choice of a college has long been established in the literature. Such general references as those of Sanford[1] and McConnell[2] indicate the selectivity of institutions of higher education. Colleges with similar characteristics tend to have similar student bodies. Conversely, similar students tend to go to similar institutions. Heist and others[3] found, for example, that personality is associated with college choice. Recent studies by Astin[4] using samples of Merit Scholars indicate that the characteristics of the college attended were an important factor in determining attendance. Astin and Holland[5], and Astin[6], have used data from the National Merit Scholarship Corporation to develop a technique for the measurement of college environments.

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[1] Sanford, Nevitt (ed.), The American College, New York, John Wiley & Sons, Inc., 1962.

[2] McConnell, T. R., and others, "Higher Education", Review of Educational Research, 30 (4), 1960.

[3] Heist, P., McConnell, T. R., Matsler, Frank, and Williams, Phoebe, "Personality and Scholarships", Science, 133, 1961, 362-367.

[4] Astin, Alexander, W., "An Empirical Characterization of Higher Education Institutions", Journal of Educational Psychology, 53 (5), 1962, 224-235.

[5] Astin, Alexander, W., and Holland, John L., "The Environmental Assessment Technique: A Way to Measure College Environments". Journal of Educational Psychology, 52 (6), 1961, 308-316.

The Environmental Assessment Technique measures eight characteristics of colleges such as student body, size, average intelligence of students and additional personal variables. Such data as theirs and that of Pace,[7] Stern,[8] and Thistlethwaite[9] indicate clearly the importance of the "character" of a college in determining who goes there. The differential characteristics of institutions of higher education have a potent stimulus value in controlling attendance at these institutions. For this reason, knowledge of these characteristics is of tremendous value in the selection of a "best fit" college to attend.

Several publications describing the characteristics of selected colleges and universities are currently available for use in educational guidance. These guides include:

Burckel, The College Blue Book

Miller and Brown, National Directory of Schools and Vocations

Gleazer, American Junior Colleges

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[6] Astin, Alexander W., "Further Validation of the Environmental Assessment Technique", Journal of Educational Psychology. 54 (4), 1963, 217-226.

[7] Pace, C. Robert, "Implications of Differences in Campus Atmosphere for Evaluation and Planning of College Programs", in Sutherland, R. L. Holtzman, W. H., Koile, E. A., and Smith, B. K. (eds.), Personality Factors on the College Campus: Review of a Symposium, Austin, Texas, Hogg Foundation for Mental Health. 1962, pp. 43-61.

[8] Stern, George C., "Characteristics of the Intellectual Climate in College Environments", Harvard Educational Review, 33 (1), 1963, 5-41.

[9] Thistlethwaite, Donald L., Effects of College Upon Student Aspirations, Cooperative Research Project No. D-098, Office of Education, Department of Health, Education and Welfare, Washington, D. C. 1965

College Entrance Examination Board, The College Handbook

Lovejoy, College Guide

Educational Research Corporation, College Admissions Data Services

Lehman, Ramsey, and Jefferson, A Handbook for the Counselors of College Bound Students. (Association Admission Counselors)

One of the typical characteristics of these publications is the fact that they permit the recovery of only a small number of characteristics associated with American colleges and universities. The recovery of these characteristics usually involves the perusal of data associated with individual institutions, primarily through the use of cross-index systems. In no instance do these types of data-retrieval systems permit the identification of colleges and universities having large multiple combinations of characteristics, except as each individual characteristic can be identified through the index system.

The College Suggestor has at least two primary advantages not shared by the college information systems listed above.

The College Suggestor:

1. Permits the systematic classification of relevant characteristics of American colleges and universities in a number not heretofore possible in a simplified data retrieval system.
2. Permits these large numbers of relevant characteristics to be classified in a system which potentially allows for the expeditious recovery of both single and multiple characteristics together with the names of colleges and universities having these characteristics. In addition, the College Suggestor represents a superior compromise between parsimony of effort in the recovery of data and the amount of data available for recovery.

The optical coincidence principle has a number of operating applications for data storage and retrieval in government, science, and industry. None are known yet to be operable in education, however, although there are several applications in process of development. Relative to information storage and retrieval, Shiff and Negus[10] have reported on the recently developed concept of inverted filing, a way of compacting information in manual or machine storage for ease of retrieval. Stern[11] of the National Bureau of Standards, has reported on the optical coincidence principle (which may be applied either to erect or inverted files) and its applicability to information retrieval problems in the physical and biological sciences, problems which are akin to those dealt with here. Stern with Wildback[12] also have reviewed patents issued and pending related to the optical coincidence search mechanism, having traced the first application of optical coincidence to a classification of birds in 1915, subsequent applications to mineral classification (1920), personnel records (1923 in France), patent files (1947 in England), etc.

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[10] Shiff, R. A., Negus, Alan G., "Indexing for Optimum Retrieval", Administrative Management Magazine, Vol. 25: 24-47, August, 1964.

[11] Stern, J. "An Application of the Peek-A-Boo Principle to Information Retrieval", Proceedings - Symposium on Materials Information Retrieval. Aeronautical Systems Division. Wright Paterson Air Force Base, Dayton, Ohio. November, 1962.

[12] Stern, J., Wildback, W. "The Peek-A-Boo System - Optical Coincidence Subject Cards in Information Searching" Chapter 6 in Punched Cards, 2d Edition, Edited by Casy, Perry, Kent and Berry. New York: Rheinhold, 1958

More recently, Marshall[13] has filed application for patents by which it becomes technically feasible to manufacture optical coincidence cards in great quantity at very low cost, once a master card for each term or characteristic has been completed. Thus, a master card is prepared to identify a given term (i.e. college characteristic) and to indicate the presence of that term in each of the sources (i.e. colleges) in the universe by placing a hole in the card at the coordinate position on the card dedicated to that source. With this done, the information stored in the card can be reproduced in quantity with high speed, low cost and great durability.

The inventions involved employ the specialized capabilities in the graphic arts of printing with ink on plastics using high-speed and precision-registered printing presses such as those used by the Army Map Service. Where typical optical coincidence requires the drilling or punching of holes, the present technique creates the

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[13] Marshall, Roger D. (Inventor) System, S196 An Application for Patent now Pending. Strauch, Nolan and Neale, Attorneys. Undated.

the "holes" through the absence of ink at dedicated "hole" positions and the presence of ink in the surround areas.

It is the amalgamation of three areas of research and development within the larger area of information storage and retrieval which makes the College Suggestor a noteworthy development: inverted filing, optical coincidence and mass production of optical coincidence cards.

The highest degree of sophistication in optical coincidence systems has been achieved at the National Bureau of Standards. A multidimensional classification of measurement terms has been developed; retrieval-reference terms have been drawn from a dictionary and structured into a file. Thirty-six thousand scientific and technical documents and articles have been encoded into holes within this file, the file having some 2,000 term cards. As would be the case in any application of this system, the presence of a given term or subject within the given reference leads to the placement of a hole in the term card identifying by coordinate the reference cited.

To use the system, a scientist selects the terms from the dictionary having terms which define the areas he wishes to search. Term cards are pulled from file and squared on a light box. Holes through which light shows are "addressed" by moving x axis and y axis indicators to an intersection at the hole. The four-digit number identifying the reference encoded at that hole position is read as an x - y coordinate, thus bringing the document identified or a 3" x 5" card annotation of the document on microfilm within immediate reach.

The Air Force Systems Command has a "random access source selection deck" of optical coincidence cards in a system which classifies potential contractors according to their technical competences. Each area of competence is identified on a card, and those potential contractors who have identified themselves as competent to work in the area are encoded as appropriate on the cards in the system. Twelve Air Force facilities use this system in order readily to identify potential contractors who might be asked to submit bids for specific research and development tasks.

There are retrieval systems built on optical coincidence in the diverse applications of analytical chemistry, biology, medicine, textiles, plastics, personnel administration and law.

Professor James Finn at the University of Southern California plans to build an optical coincidence data retrieval system for the cataloging of technological innovations and new media in education, this under an Office of Education grant. For details on this project reference should be made to Staff Paper No. 2 in the Instructional Technology and Media Project authored by B. M. Bolvin and J. D. Finn, dated, June, 1964.

An Advisory Committee was appointed and convened during the latter stages of the development of the College Suggestor to examine the device and the possible uses and misuses which it might have within the educational community. Membership for this Committee is given at Appendix 1.

The Advisory Committee for the College Suggestor met at Northwestern University on February 28 and March 1, 1966.

Table 3 presents the agenda indicating the order of business for these two days. After greetings from Dean B. H. Chandler of the School of Education, the Committee selected as chairman Dr. George C. Giles, Jr., of the Department of Education, Congress Circle Campus, University of Illinois, Chicago.

Dr. Mathis, the principal investigator of the project, opened the discussion by presenting the background leading to the Office of Education funding. He stated that the Office of Education had initiated discussions with Educational Testing Service and Northwestern University concerning the College Suggestor, so that the project itself was essentially an invitational undertaking.

Publicity for the project was discussed with particular reference to the releases in the Wall Street Journal and the Christian Science Monitor. Several inaccuracies were corrected. The publicity release from the Northwestern University Department of Public Relations appears at Appendix 5. Examples of publicity appear at Appendix 6. Dr. Mathis pointed out that the interests of the Educational Testing Service and of Northwestern University were clearly oriented toward the research and development necessary for the production of a prototype model. Questions relating to

-- TABLE III --

THE SCHOOL OF EDUCATION
Northwestern University

National Committee Advisory to the College Suggestor Project

Monday, February 28, 1966
2 p.m.

Parkes Hall
Room 215

AGENDA

1.	Greetings	Dean B. J. Chandler
2.	Selection of Chairman	Dean B. J. Chandler
3.	Overview of the Project	Dr. B. Claude Mathis
4.	A Discussion of the Data Going Into the College Suggestor	Mrs. Betty D. White
5.	A First Effort to Incorporate College Environment Information in the College Suggestor	Mr. J. Robert Cleary
6.	Technical Considerations in the College Suggestor System	Mr. Roger Marshall
7.	Issues on Which Counsel is Needed	Dr. B. Claude Mathis Dr. Wesley W. Walton

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Tuesday, March 1, 1966
9 a.m.

Parkes Hall
Room 215

AGENDA

1.	Announcement and Project Refresher	Chairman
2.	Review Plans for Field Test	Dr. B. Claude Mathis Dr. Wesley W. Walton
3.	Discussion, Clarification and at Least Partial Resolution of Issues	Chairman

* * 12:00 - Lunch Orrington Hotel, * *

4. Final Discussion (1:30 - 3:00)

marketing and distribution will need to be answered by the Office of Education through procedures which it will need to define. In reviewing the College Suggestor, Dr. Mathis indicated that the device is intended only as a supplement to other aids presently used in the college selection process. The device provides a method of rapid identification and screening of colleges which a student may judge desirable for attendance. The student would use the information from the College Suggestor to guide him toward other sources such as college guides and catalogs. The device could be used in a counseling situation; independently by the student; or by the student with his parents. Additionally, the College Suggestor has a potential use in training programs for high school counselors.

Dr. Wesley W. Walton of the Educational Testing Service described the design of the device. He indicated the manner in which the printing was done on the plastic sheets; the optical coincidence technique, which employs use of the overlay of plastic sheets, and the possibilities for future refinements of the device.

Several questions were asked concerning the type of data going into the College Suggestor. Dr. Plaut was particularly concerned that the type of information appeared to emphasize questions which a middle class population might ask about colleges. He indicated that he felt it would be necessary at some point to consider the special point of view which the culturally and economically disadvantaged youth holds toward college. Many of the questions which these users have about college attendance would not be the questions important to a person who is economically advantaged. Dr. Walton discussed the possibility of adapting the system to the needs of the culturally and economically disadvantaged by including additional information for this type of consumer. He stressed the ease with which the College Suggestor could be modified for different audiences by the inclusion of various types of information. Dr. Pace indicated that the size of the university may be a factor in the accuracy of the characteristics contained in the College Suggestor. He remarked that the 217 characteristics proposed may reflect a more accurate representation of the smaller liberal arts college than of the university. An examination of the list of colleges not responding to the questionnaire indicate that community colleges and junior colleges were the most frequent non-responders. Dr. Pace suggested that some attention be given to a check of the validity of the information given in the questionnaire. Mrs. White pointed out that some difficulty in filling out the questionnaire was reported by a few Admissions Officers in large universities. One question raised for consideration was whether the number of characteristics solicited from colleges and universities were actually the number needed to make the College Suggestor an effective device. Perhaps fewer characteristics would be equally effective.

Dr. Mathis indicated that a field test is urgently needed to determine what characteristics are most frequently used by the college bound student seeking information from the College Suggestor.

Mr. Cooper discussed some of the problems which might be encountered in the use of the device in a counseling setting in a high school. He indicated that high school counselors do not always have the best materials available to them. He felt that the College Suggestor could be both good and bad for the college advisement situation, depending upon the use made of it by the counselors.

Dr. Hummel suggested that school counselors are really at the mercy of the information available to them. It would be of tremendous importance to indicate to the counselor the limitations of the College Suggestor, so that the counselor does not impute to it a power it does not possess.

Dr. Mathis discussed the proposed field test. He indicated that the design will give as much feed-back as possible for the correction of developmental errors in the College Suggestor.

Father O'Brien suggested that the image which a college has of itself would most certainly influence the information which a college gives in a questionnaire. The College Suggestor should include more items of a qualitative nature which tend to present this type of information in some way other than through the usual statistical profiles.

Dr. Pace discussed some concern that the company marketing the College Suggestor should assume responsibility for updating and revising the various characteristics as more information becomes available about colleges. He suggested that a whole new concept in college admission counseling could emerge from the use of the College Suggestor.

Both Dr. Walton and Dr. Mathis expressed concern over the marketing of the College Suggestor without adequate field testing. They feel that the Educational Testing Service and Northwestern University have a commitment to solicit the advice of the Advisory Committee and to recommend to the Office of Education marketing guide lines based on this advice.

Dr. Pace stated that the device should be useful to many people. It is a way of reducing a great deal of information into usable units. One advantage is that it identifies for the student and counselor those institutions which may not have previously been considered. The College Suggestor should suggest to the student and parent much more than the counselor could do alone. The College Suggestor could help a poor counselor more than a good one. In addition the College Suggestor should be a valuable research tool for the person who needs to identify sample populations consisting of schools with similar multiple characteristics.

Table 4 presents some questions which guided portions of Committee discussion.

During the two day meeting of the Committee the following statements were formally and unanimously approved as indicative of

TABLE IV - - NATIONAL ADVISORY COMMITTEE

The College Suggestor
March 1, 1966

ISSUES FOR DISCUSSION

1. Does it seem to you that the College Suggestor addresses itself to a present and significant need in higher education? If so, could the need be served more effectively through some other means?

2. Does pushing forward with the project seem to you to be justified? If so, on what grounds? If not, are there alternative explorations which should be made as to the organization of information in higher education? Or present schemes with which it should be merged?

3. What is your estimate as to the amount of information the College Suggestor might convey to the school counselor? Could all the information be used in a positive way? Might some of it be used in a negative way? What safeguards could be instituted to minimize the latter?

4. What additional classifications of information and categories within classifications have you to suggest? Are there classifications or categories of information in the prototype to which you would care to raise objections? Are there some whose inclusion you would care to commend?

5. Are there research needs in higher education which could be satisfied via the College Suggestor system? What are these? How could the system be of most help as a tool for educational research?

6. Assuming an on-going College Suggestor system, would biennial "updating" of the bulk of the information be adequate? What data would require more frequent updating?

7. How could information for the system best be gathered? Could more than this project's needs be satisfied in the gathering of information for incorporation in future versions of the device? Are there organizations which might be willing to cooperate in the multi-purpose collection of higher education information?

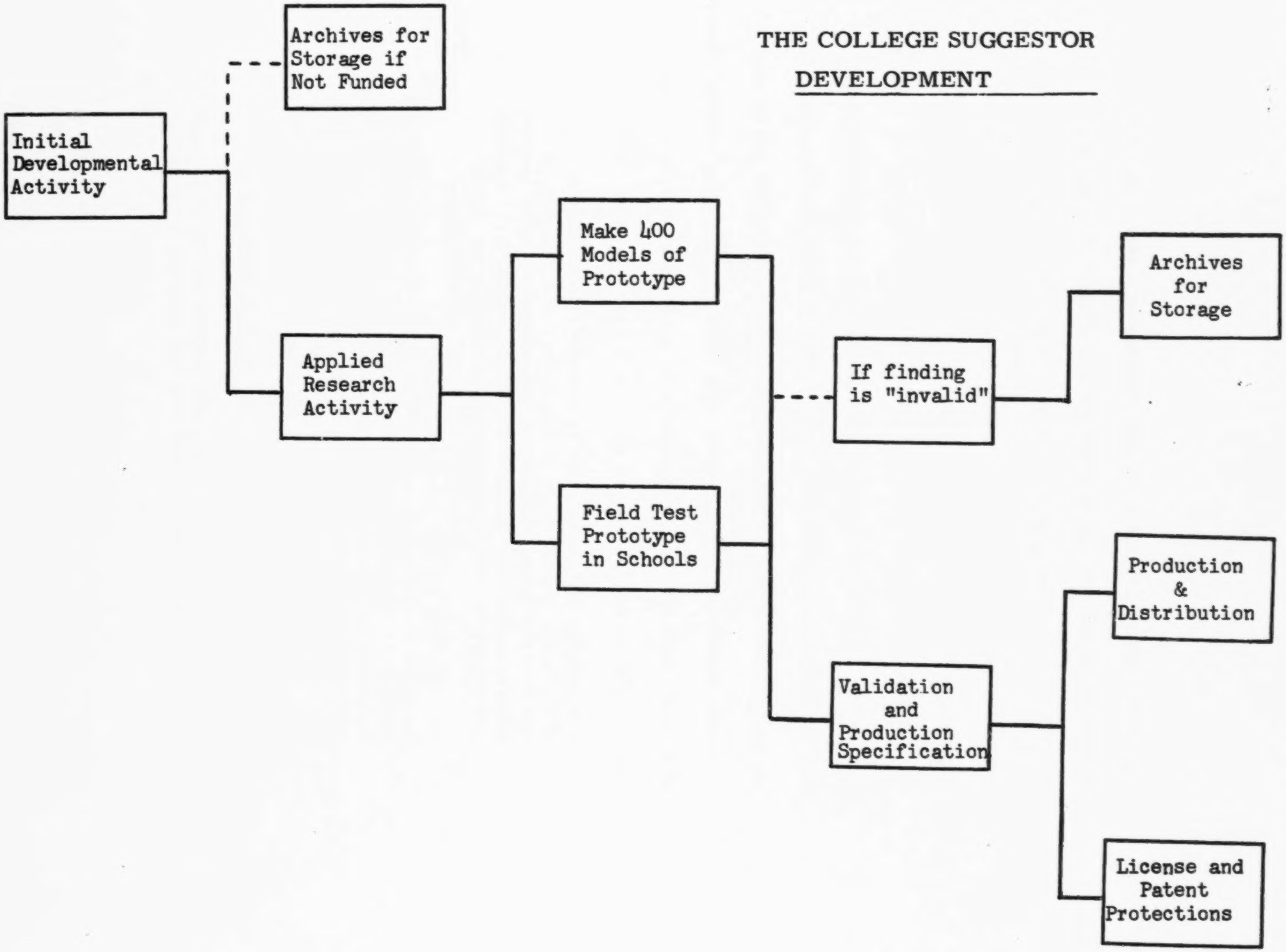
8. How open can a college profile be? How open need a college profile be? How can this project accelerate acceptance on the part of the several colleges to compile and to permit publication

TABLE IV (continued)

9. How might the project best take cognizance of objections to the system "audibly" voiced by the education community? How can it be made sensitive to objections which are ordinarily "inaudible?"

10. To how much of a field test should the system be exposed prior to its limited or its widespread distribution? Toward what kinds of objectives should a field test for a device of this type be pointed?

THE COLLEGE SUGGESTOR DEVELOPMENT


Initial Developmental Activity
Archives for Storage if Not Funded
Applied Research Activity
Make 400 Models of Prototype
Field Test Prototype in Schools
If finding is "invalid"
Archives for Storage
Validation and Production Specification
Production & Distribution
License and Patent Protections

Committee reaction to, and concern for, the College Suggestor:

> The Committee wishes to express its concern relative to the inclusion of the College Suggestor in the public domain without adequate controls to insure its valid and reliable use within the educational community. The Committee recommends to the Office of Education that some form of licensing agreement be entered into for the distribution of the College Suggestor and that this licensing agreement involve the direct participation of a representative group from the educational community, chartered for the purpose of establishing policies with respect to distribution, use, marketing and revision of the device.
>
> The Committee feels that developments in the College Suggestor project to date are most commendable; however, the project is of sufficient importance to make further development mandatory. A field test and evaluation are imperative to the use of the College Suggestor.

The College Suggestor device will be a significantly instructive tool when used by and for students as they construct their educational plans for study beyond high school. For this reason, models of the device should be tested in counselor-counselee situations and in counselor-independent situations to determine the nature and extent of use by students and counselors in connection with the college selection planning process, and the extent of change attributable to the use of the device.

The prime objective of a field test is to evaluate the effectiveness of the College Suggestor inside and outside the counseling situation as an aid for broadening the vistas of high school students concerning their future educational opportunities.

Of major interest is the extent to which use of College Suggestor will influence college choice practices among high school students. It is of especial interest to measure the use by a variety of students in counseling situations presented both in urban and non-urban school systems. Among the questions for which answers are sought are the following:

Will a greater number of college characteristics be considered by students as they narrow college choices?

Will a greater number of colleges be considered by students as they settle on those to which they will apply?

Will students learn in more depth what the colleges suggested to students are like?

Will the geographical radii to colleges under consideration by students increase through use of the device?

In what other respect are changes in college choice practices observed to be a function of College Suggestor availability and use?

To what extent will students attempt to learn more about colleges between scheduled sessions with the counselor or independent of counselor?

To what extent are students' educational plans made more explicit, detailed and insightful?

Can the device be used effectively in group guidance activities designed to encourage planning to take advantage of educational opportunities beyond the high school?

By College Suggestor browsing can the individual student derive sufficient insight concerning colleges related to his interests to go to subsequent steps in college guides, handbooks and catalogues?

The secondary objective is to identify from field experience with the College Suggestor the modifications in content, configuration and operating characteristics to be incorporated as improvements to the device. Before the U. S. Office of Education authorizes manufacture and marketing the device, it will be necessary to make improvements which are found to be necessary as a result of field experience with it. Improvements are contemplated in content, with respect both to the college characteristics and universe of the colleges for which characteristics are shown. A second kind of improvement is expected in design specifications of the equipment. Finally, refinements should be identified as to ways in which the device is operated and as to the instructions issued for its operation. Among questions to be answered are the following:

What college characteristics need to be added to the College Suggestor? Which ones discarded?

Of the college characteristics included in the device, how should the differentiating information be structured to reflect the way information about colleges is found to be most usefully displayed?

Are colleges willing to have their characteristics encoded into the system and able to provide the information?

What improvements can be made in the design of the college characteristics card? How can it be made to operate more easily?

What changes can be made in the design of the deck of cards making up the system? How can the cards be more easily refiled?

How can the packaging be improved? What kind of template is needed for squaring the deck of cards? What kind of light box should be recommended?

How can operating characteristics be improved? What improvements are needed in instructions issued in connection with the operation of the system? What needed accessory materials have not been provided?

The experiences of Northwestern University, and the Educational Testing Service, together with the advice and counsel of the National Advisory Committee, relative to the development of the prototype of the College Suggestor strongly support the following recommendations concerning the future of the device:

1. That authorization for the manufacture of not more than 500 sets of the prototype model of the College Suggestor be issued at the very earliest practicable date and that funds be allocated for the purpose.
2. That subsequent authorization be issued for a field test to involve experimental use of the prototype models and that funds in part to support these research and development efforts be allocated for the purpose.
3. That the Office of Education give serious consideration to a provision for licensing this device in connection with its commercial distribution, and that it evolve a means for enforcing desirable controls through a representative group of educators chartered especially for this purpose.
4. Finally, That the Office of Education sensitize itself to the possible commercial exploitation of the College Suggestor and to the special need for protecting the potential users of the device from undesirable effects of actions based on considerations other than those taken in the best interest of the educational community.

APPENDIX I.

Advisory Committee for the College Suggestor

February 28, March 1, 1966 — Parkes Hall - Room 215

Dr. B. Claude Mathis
-
Project Director

Mr. Ted Cooper	College Counselor, Denver Public Schools
Dr. George C. Giles, Jr.	Division of Education, University of Illinois, Chicago Circle Campus
Dr. Roland J. Hinz	Director of Admissions, Northwestern University
Dr. Dean L. Hummel ✓	Chairman of Guidance, Counseling, and Student Personnel, Ohio University
Dr. Richard McKee ✓	Acting Director, Research, Ball State University
Reverend Thaddeus J. O'Brien, O. Carm.	Principal, Mt. Carmel High School, Chicago
Dr. C. Robert Pace ✓	Professor of Higher Education, University of California, Los Angeles
Dr. Blanche Paulson	Director, Bureau of Pupil Personnel Services, Chicago Board of Education
Dr. Richard L. Plaut	President, National Scholarship Service and Fund for Negro Students, New York
Dr. John A. Schmitt	Director, Office of Testing Services, Boston College

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EDUCATIONAL TESTING SERVICE

Dr. Wesley W. Walton ✓	Director, Developmental Programs & Services
Mrs. Betty D. White	Professional Associate, Midwest Office
Mr. J. Robert Cleary ✓	Director, Advisory Services, Midwest Office
Mr. Roger Marshall	Consultant to Educational Testing Service

college
suggestor
questionnaire

EDUCATIONAL TESTING SERVICE
PRINCETON, NEW JERSEY
BERKELEY, CALIFORNIA
EVANSTON, ILLINOIS

ALL RIGHTS RESERVED

Questionnaire to collect information for the COLLEGE SUGGESTOR

DIRECTIONS

The purpose of this questionnaire is to assemble descriptive information about the 2,160 junior colleges, colleges and universities in the United States. The information will be processed into the COLLEGE SUGGESTOR, an information retrieval system, for use by the schools as an aid to counselors and their students. Through its use, they will be able to learn more about colleges to help them make realistic plans for education beyond high school.

Completion and return of this questionnaire, then, is particularly important. The information supplied will make possible a highly useful and much needed guidance tool. From your return, a description of your college will be stored in an information system of some four hundred thousand descriptive statements concerning American junior colleges, colleges and universities. Failure to respond to a certain item will make it appear in the system as though your institution lacks that particular characteristic, and thus, you may be eliminated from the consideration of many prospective students.

With the Admissions Officer's copy of this form will be found a manifold upon which a series of descriptive statements concerning your institution have been listed. These have been drawn into the information system from public files and are scheduled for inclusion in their present form as part of the first edition of the COLLEGE SUGGESTOR device. We are asking that you review these statements and send us comments along with the completed questionnaire. If you discover that your tuition and fees and total costs are missing, please add these figures to the bottom of the questionnaire.

The research reported herein is under the direction of Northwestern University with the cooperation and technical support of the Educational Testing Service.

We are asking that the Admissions Officer assume responsibility for preparing the questionnaire. Please answer all questions in the sections that are applicable for your institution. A check mark in the space provided before the appropriate alternative will usually be sufficient. Information descriptive of your student body should be related to the incoming class of 1964. Other responses should represent the situation that will pertain to the academic year 1965-66.

Your cooperation will be very much appreciated. Reports of progress concerning the development of the COLLEGE SUGGESTOR will be released at regular intervals.

After completing the instrument, place it, together with comments as may be appropriate, in the prepaid envelope provided, and mail it to:

Educational Testing Service
610 Church Street
Evanston, Illinois 60201

B. Claude Mathis, Ph.D.
Professor of Education and Psychology
Northwestern University
Principal Investigator

ALL INSTITUTIONS SHOULD ANSWER THE FOLLOWING QUESTIONS

1. Which of the following population categories best describes the location of your institution?

____(1) Town of less than 10,000

____(2) City or town of 10,000 to 49,999

____(3) City, not a suburb, 50,000 to 499,999

____(4) City, not a suburb, 500,000 and over

____(5) Suburb of metropolitan area of 100,000 and over

In answering questions 2 through 8 on admission requirements, please indicate those presently used in admission procedures and not necessarily those listed in the catalog.

2. What number of secondary school units are required for admission?

____(1) Less than 12

____(2) 12-14

____(3) 15 or more

____(4) Unspecified number

3. Is admission based on specific courses taken in secondary school?

__________(1) Yes __________(2) No

4. How many years of English are required for admission?

____(1) Less than 3 years

____(2) 3 years

____(3) 4 years

____(4) Unspecified

5. Are at least 2 years of college preparatory mathematics required for admission?

__________(1) Yes __________(2) No

6. Is at least one year of a laboratory science required for admission?

__________(1) Yes __________(2) No

7. How many years of a foreign language are required for admission?

____(1) Less than 2 years

____(2) At least 2 years

____(3) No foreign language required

8. What is the recommended date for receiving admission applications?

____(1) Between September and February 1

____(2) Between September and April 1

____(3) Between September and July 31

____(4) No recommended date or other than above

9. Are admissions made on a rolling basis? (i.e., qualified applicants tendered admission as they apply)

__________(1) Yes __________(2) No

10. Is early admission granted? (i.e., unusually qualified students admitted to freshmen class before completion of secondary school program)

__________(1) Yes __________(2) No

11. Are early decisions made in the case of well-qualified applicants?

__________(1) Yes __________(2) No

12. Check the percent of qualified applicants you offered admission in the academic year 1964-65.

____(1) Less than 10%

____(2) 10%-19%

____(3) 20%-29%

____(4) 30%-39%

____(5) 40%-49%

____(6) 50%-59%

____(7) 60% and over

13. Check the percent of all applicants you offered admission in the academic year 1964-65.

____(1) Less than 10%
____(2) 10%-19%
____(3) 20%-29%
____(4) 30%-39%
____(5) 40%-49%
____(6) 50%-59%
____(7) 60% and over

14. Is an admission test required for entrance? (Include any tests, whether institutional, CEEB, ACT or other)

__________(1) Yes __________(2) No

15. Will you consider non-high school graduates?

__________(1) Yes __________(2) No

16. Will you consider applicants from the lower half of a graduating class under certain circumstances?

__________(1) Yes __________(2) No

17. Do you admit freshmen other than in the fall?

__________(1) Yes __________(2) No

18. Do you admit transfers other than in the fall?

__________(1) Yes __________(2) No

19. Is a summer trial session available for applicants who are promising but have some form of deficiency?

__________(1) Yes __________(2) No

20. Check all levels at which you will ordinarily accept transfers.

____(1) Freshman
____(2) Sophomore
____(3) Junior
____(4) Senior
____(5) Will not accept transfers

21. Which of the following categories indicates the annual average undergraduate student financial aid award given by the institution? (Include single and packaged aids and divide by number of students actually receiving aid)

____(1) \$100-\$499
____(2) \$500-\$999
____(3) \$1,000-\$1,499
____(4) \$1,500 and over

22. Which of the following proportions best approximates the number of freshmen receiving financial aid from your institution? (Include single and packaged aids)

____(1) Less than 1/4
____(2) 1/4 to 1/2
____(3) 1/2 to 3/4
____(4) 3/4 or more

23. Do you have a guaranteed tuition base (i.e., tuition remains stable during normal stay of student)

__________(1) Yes __________(2) No

24. Is there satisfactory opportunity for off-campus employment near-by?

___________(1) Yes ___________(2) No

25. Are the average earnings of undergraduate students' campus jobs $300 or more per year?

___________(1) Yes ___________(2) No

26. Is a work-study program available?

___________(1) Yes ___________(2) No

27. Is advanced placement given for college level work completed in secondary school?

___________(1) Yes ___________(2) No

28. Is college credit given for college level work completed in secondary school?

___________(1) Yes ___________(2) No

29. Is college credit and/or placement given for college level work on the basis of an examination?

___________(1) Yes ___________(2) No

30. Are formal counseling services available?

___________(1) Yes ___________(2) No

31. Is pre-admission counseling available?

___________(1) Yes ___________(2) No

32. Are independent study courses available?

___________(1) Yes ___________(2) No

33. Are departmental honor programs available?

___________(1) Yes ___________(2) No

34. Listed below are three institutional orientations. Place a "1" before the emphasis you feel best describes your undergraduate institution. Then rank the other alternatives, leaving blank any that do not pertain to your institution at all.

____(1) Here the interest is mainly in giving the student a basic liberal arts education stressing a curiosity about new knowledge and ideas and help in self-understanding. Abstract and theoretical ideas are emphasized

____(2) This is the scientific-minded institute with excellent laboratory facilities and an interest in research. The students are on their own to take advantage of such facilities. There may be a good deal of competitiveness here

____(3) Here occupational training is stressed. While academic experiences are provided, applied and practical matters are stressed in contrast to the theoretical. Students are usually committed to some particular field and have come for training in that area

35. Check how many of your full time faculty have earned degrees at the Ph.D. level or its equivalent.

____(1) Less than 1/4
____(2) Between 1/4 and 1/2
____(3) Between 1/2 and 3/4
____(4) 3/4 or over

36. Check how many of your full-time faculty have earned degrees beyond the baccalaureate.

____(1) Less than 1/4
____(2) Between 1/4 and 1/2
____(3) Between 1/2 and 3/4
____(4) 3/4 or over

37. What is the percent of your 1964-65 freshman class that graduated in the top fifth of their respective secondary school class?

____(1) Under 20%
____(2) 20%-39%
____(3) 40%-59%
____(4) 60% or more

38. The CEEB SAT Verbal mean score for your 1964-65 entering class was in the following range:

____(1) Under 400
____(2) 400-499
____(3) 500-599
____(4) 600-649
____(5) 650 and over
____(6) Does not apply

39. The CEEB SAT Mathematical mean score for your 1964-65 entering class was in the following range:

____(1) Under 400
____(2) 400-499
____(3) 500-599
____(4) 600-649
____(5) 650 and over
____(6) Does not apply

40. The ACT mean composite score for your 1964-65 entering class was in the following range:

____(1) Under 12
____(2) 12-15
____(3) 16-21
____(4) 22-25
____(5) 26 or over
____(6) Does not apply

41. Estimate below the percent of your 1963-64 entering class that returned during the academic year 1964-65.

____(1) Less than 50%
____(2) 50%-59%
____(3) 60%-69%
____(4) 70%-79%
____(5) 80%-89%
____(6) 90% and over

42. Check the residential facilities available.

____(1) Almost all residential facilities are on campus
____(2) Almost all residential facilities are off campus
____(3) Fraternities have housing facilities
____(4) Sororities have housing facilities
____(5) Facilities for women only
____(6) Facilities for men only
____(7) No residential facilities available

43. Estimate the percent of your student body that belongs to social fraternities/ sororities.

____(1) Under 10%
____(2) 10%-19%
____(3) 20%-29%
____(4) 30%-39%
____(5) 40%-49%
____(6) 50% or over
____(7) Does not apply

44. Which of the following best describes the manner in which your undergraduate students engage in the various activities of campus life at your institution?

____(1) Academic achievement and pursuit of knowledge for its own sake are the preoccupation of students here. Social and institutional activities are informal and students tend to pursue these informally and individually

____(2) Although students are fully engaged in the academic side of campus life here, the importance of extra-curricular activities is well recognized, formally organized, and viewed by most students as important parts of their development

____(3) "Togetherness" typifies this campus. Students and faculty work closely together in all phases of campus life. Students show concern for social responsibility and social action

____(4) Students stress the importance of establishing interpersonal relationships on campus and of working within the "system" to attain a degree of status. Student leadership and school spirit are quite evident

45. Do more than 1/2 of your full time students commute?

__________(1) Yes __________(2) No

46. Do you seek a geographically diverse student body?

__________(1) Yes __________(2) No

47. Are cultural activities (plays, concerts, art exhibits, etc.) readily available for students by frequent public transportation?

__________(1) Yes __________(2) No

48. Are cultural activities (plays, concerts, art exhibits, etc.) centered mainly on campus?

__________(1) Yes __________(2) No

49. Check to show whether you offer certification programs in the following fields, even if you do not offer a major in education.

____(1) Elementary education

____(2) Secondary education

____(3) Neither elementary nor secondary education

FOUR-YEAR INSTITUTIONS ONLY SHOULD ANSWER QUESTIONS 50 THROUGH 56. JUNIOR COLLEGES GO ON TO QUESTION 57.

50. Is ROTC required?

__________(1) Yes __________(2) No

51. Check the ROTC programs that are available.

____(1) Army

____(2) Navy

____(3) Air Force

____(4) None

52. May a student complete all baccalaureate degree requirements in less than 4 calendar years?

__________(1) Yes __________(2) No

53. Do you have a formal program available for study abroad?

__________(1) Yes __________(2) No

54. What percent of your total enrollment are graduate students?

____(1) No graduate students

____(2) Less than 10%

____(3) 10%-19%

____(4) 20%-29%

____(5) 30%-39%

____(6) 40%-49%

____(7) 50% or more

55. How many women graduates go on to graduate or professional study?

____(1) Less than 1/4

____(2) Between 1/4 and 1/2

____(3) 1/2 or more

____(4) Does not apply

56. How many male graduates go on to graduate or professional study?

____(1) Less than 1/4

____(2) Between 1/4 and 1/2

____(3) 1/2 or more

____(4) Does not apply

JUNIOR COLLEGES ONLY SHOULD ANSWER THE FOLLOWING TWO QUESTIONS

57. How many women graduates go on to 4-year colleges or some other type of formal education?

____(1) Less than 1/4

____(2) Between 1/4 and 1/2

____(3) 1/2 or more

____(4) Does not apply

58. How many male graduates go on to 4-year colleges or some other type of formal education?

____(1) Less than 1/4

____(2) Between 1/4 and 1/2

____(3) 1/2 or more

____(4) Does not apply

COLLEGE SUGGESTOR CHARACTERISTICS

TOTAL 217
3-31-66

LOCATION 13

LOCATION IN NEW ENGLAND		0100
LOCATION IN THE MIDDLE ATLANTIC STATES		0101
LOCATION IN THE GREAT LAKES STATES		0102
LOCATION IN THE PLAINS STATES		0103
LOCATION IN THE SOUTHEAST		0104
LOCATION IN THE SOUTHWEST		0105
LOCATION IN THE ROCKY MOUNTAIN STATES		0106
LOCATION IN THE FAR WEST		0107
LOCATED IN A SUBURB OF METROPOLITAN AREA OF 100,000 OR OVER	Q1.5	0108
LOCATED IN A CITY, 500,000 OR OVER	Q1.4	0109
LOCATED IN A CITY, NOT A SUBURB, 50,000 TO 500,000	Q1.3	0110
LOCATED IN A CITY OR TOWN OF 10,000 TO 50,000	Q1.2	0111
LOCATED IN A TOWN OF LESS THAN 10,000	Q1.1	0112

SIZE 5

ENROLLMENT IS BELOW 600	0200
ENROLLMENT IS BETWEEN 600 and 999	0201
ENROLLMENT IS BETWEEN 1000 and 2499	0202
ENROLLMENT IS BETWEEN 2500 and 9999	0203
ENROLLMENT IS 10,000 OR MORE	0204

CONTROL 6

CONTROL OF COLLEGE BY STATE OR FEDERAL AGENCY	0300
CONTROL OF COLLEGE BY LOCAL GOVERNMENT	0301

CONTROL OF COLLEGE BY INDEPENDENT NON-PROFIT BODY		0302
CONTROL OF COLLEGE BY INDEPENDENT PROPRIETARY BODY		0303
AFFILIATION OF COLLEGE WITH ROMAN CATHOLIC CHURCH		0304
AFFILIATION OF COLLEGE WITH RELIGIOUS GROUP OTHER THAN ROMAN CATHOLIC		0305

PREREQUISITES 9

TWELVE OR MORE SECONDARY SCHOOL UNITS REQUIRED	Q2(2+3)	0400 -
FIFTEEN OR MORE SECONDARY SCHOOL UNITS REQUIRED	Q2(3)	0401
ACADEMIC COURSE OF STUDY IN SECONDARY SCHOOL NOT SPECIFIED	Q3.2	0402
PREREQUISITE OF FOUR YEARS ENGLISH	Q4.3	0403
PREREQUISITE OF THREE YEARS OF ENGLISH	Q4.2	0404
PREREQUISITE OF AT LEAST TWO YEARS FOREIGN LANGUAGE	Q7.2	0405
NO FOREIGN LANGUAGE PREREQUISITE	Q7.3	0406
PREREQUISITE OF AT LEAST TWO YEARS MATHEMATICS	Q5.1	0407
PREREQUISITE OF AT LEAST ONE YEAR LABORATORY SCIENCE	Q6.1	0408

ADMISSION INFORMATION 14

AN ADMISSIONS TEST IS REQUIRED	Q14.1	0500
OVER SIXTY PERCENT OF QUALIFIED APPLICANTS WERE OFFERED ADMISSION IN RECENT YEAR	Q12(7)	0501
OVER SIXTY PERCENT OF ALL APPLICANTS WERE OFFERED ADMISSION IN RECENT YEAR	Q13(7)	0502
ADMISSIONS DECISIONS MADE ON ROLLING BASIS	Q9.1	0503
EARLY ADMISSION GRANTED WHEN APPROPRIATE	Q10.1	0504

EARLY DECISIONS MADE IN APPROPRIATE CASES	Q11.1	0505
FRESHMEN ADMITTED OTHER THAN IN THE FALL	Q17.1	0506
TRANSFERS ADMITTED OTHER THAN IN THE FALL	Q18.1	0507
WILL CONSIDER APPLICANTS FROM LOWER HALF OF GRADUATING CLASS UNDER CERTAIN CIRCUMSTANCES	Q16.1	0508
WILL CONSIDER NON-HIGH SCHOOL GRADUATES WHEN CIRCUMSTANCES WARRANT	Q15.1	0509
SUMMER TRIAL SESSION AVAILABLE FOR PROMISING APPLICANTS	Q19.1	0510
ADMISSION APPLICATIONS RECEIVED PRIOR TO FEBRUARY	Q8.1	0511
ADMISSION APPLICATIONS RECEIVED PRIOR TO APRIL	Q8.2	0512
ADMISSION APPLICATIONS RECEIVED THROUGH JULY	Q8.3	0513

COSTS 14

TUITION AND FEES FOR OUT OF STATE STUDENTS UNDER $500	0600
TUITION AND FEES FOR IN STATE STUDENTS UNDER $500	0601
TUITION AND FEES UNDER $600	0602
TUITION AND FEES UNDER $800	0603
TUITION AND FEES UNDER $1,000	0604
TUITION AND FEES UNDER $1,200	0605
TUITION AND FEES UNDER $1,500	0606
TUITION AND FEES OVER $1,500	0607
TUITION, FEES, ROOM AND BOARD UNDER $1,100	0608
TUITION, FEES, ROOM AND BOARD UNDER $1,600	0609
TUITION. FEES. ROOM AND BOARD UNDER $2,100	0610

TUITION, FEES, ROOM AND BOARD UNDER $2,600		0611
TUITION, FEES, ROOM AND BOARD UNDER $3,100		0612
TUITION, FEES, ROOM AND BOARD OVER $3,100		0613

FINANCIAL AID 10

OFFERS FOUR-YEAR GUARANTEED TUITION BASE	Q23.1	0700
INSTITUTION HAS COLLEGE WORK-STUDY PROGRAM	Q26.1	0701
ADEQUATE OPPORTUNITY AVAILABLE FOR OFF-CAMPUS EMPLOYMENT	Q24.1	0702
AVERAGE EARNINGS FOR UNDERGRADUATE JOBS $300 OR MORE PER YEAR	Q25.1	0703
MORE THAN HALF THE FRESHMAN CLASS HAS BEEN RECEIVING FINANCIAL AID IN RECENT YEARS	Q22(3+4)	0704
MORE THAN ONE FOURTH THE FRESHMAN CLASS HAS BEEN RECEIVING FINANCIAL AID IN RECENT YEARS	Q22(2+3+4)	0705
LESS THAN ONE QUARTER THE FRESHMAN CLASS HAS BEEN RECEIVING FINANCIAL AID IN RECENT YEARS	Q22.1	0708
AVERAGE STUDENT AWARD, INCLUDING SINGLE AND PACKAGED AIDS, HAS RECENTLY RUN $100 TO $499	Q21.1	0709
AVERAGE STUDENT AWARD, INCLUDING SINGLE AND PACKAGED AIDS, HAS RECENTLY RUN $500 TO $999	Q21(2)	0706
AVERAGE STUDENT AWARD, INCLUDING SINGLE AND PACKAGED AIDS, HAS RECENTLY EXCEEDED $1,000 PER YEAR	Q21(3+4)	0707

PROGRAM 31

TYPE OF ACADEMIC PROGRAM: UNIVERSITY	0800
TYPE OF ACADEMIC PROGRAM: LIBERAL ARTS COLLEGE	0801
TYPE OF ACADEMIC PROGRAM: FINE ARTS COLLEGE	0802
TYPE OF ACADEMIC PROGRAM: TECHNOLOGICAL COLLEGE	0803
TYPE OF ACADEMIC PROGRAM: THEOLOGICAL OR RELIGIOUS COLLEGE	0804
TYPE OF ACADEMIC PROGRAM: TEACHERS COLLEGE & LIBERAL ARTS AND TEACHER EDUCATION	0805
TYPE OF ACADEMIC PROGRAM: JUNIOR COLLEGE	0806

TYPE OF ACADEMIC PROGRAM: SUB-BACCALAUREATE TECHNICAL AND SEMI-PROFESSIONAL		0807
CERTIFICATION PROGRAM OFFERED IN SECONDARY EDUCATION	Q49.~~1~~2	0808
CERTIFICATION PROGRAM OFFERED IN ELEMENTARY EDUCATION	Q49.~~2~~1	0809
ROTC REQUIRED	Q50.1	0810
AIR FORCE RESERVE OFFICER TRAINING CORPS PROGRAM AVAILABLE	Q51.3	0811
ARMY RESERVE OFFICER TRAINING CORPS PROGRAM AVAILABLE	Q51.1	0812
NAVY RESERVE OFFICER TRAINING CORPS PROGRAM AVAILABLE	Q51.2	0813
FORMAL COUNSELING SERVICES AVAILABLE FOR UNDERGRADUATES	Q30.1	0814
DEPARTMENTAL HONORS PROGRAMS AVAILABLE	Q33.1	0815
ADVANCED PLACEMENT GIVEN FOR COLLEGE LEVEL WORK COMPLETED IN SECONDARY SCHOOL	Q27.1	0816
COLLEGE CREDIT GIVEN FOR COLLEGE LEVEL WORK COMPLETED IN SECONDARY SCHOOL	Q28.1	0817
COLLEGE CREDIT AND/OR ADVANCED PLACEMENT GIVEN FOR COLLEGE LEVEL WORK ON BASIS OF AN EXAMINATION	Q29.1	0818
INDEPENDENT STUDY COURSES AVAILABLE	Q32.1	0819
FORMAL PROGRAM AVAILABLE FOR STUDY ABROAD	Q53.1	0820
BACCALAUREATE REQUIREMENT MAY BE MET IN LESS THAN FOUR YEARS	Q52.1	0821
CAMPUS ORIENTATION INCLINES TOWARD LIBERAL ARTS EMPHASIS	Q34.1	0822
CAMPUS ORIENTATION INCLINES TOWARD TECHNICAL/SCIENTIFIC EMPHASIS	Q34.2	0823
CAMPUS ORIENTATION INCLINES TOWARD OCCUPATIONAL/PRE PROFESSIONAL EMPHASIS	Q34.3	0824
CULTURAL ACTIVITIES (CONCERTS, PLAYS, ART EXHIBITS, ETC.) READILY AVAILABLE BY FREQUENT PUBLIC TRANSPORTATION	Q47.1	0825
CULTURAL ACTIVITIES (CONCERTS, PLAYS, ART EXHIBITS, ETC.) CENTER MAINLY ON CAMPUS	Q48.1	0826

ACCREDITED BY REGIONAL ASSOCIATIONS		0827	6
CALENDAR BASED ON SEMESTER PLAN		0828	
CALENDAR BASED ON QUARTER PLAN		0830	
CALENDAR BASED ON TRIMESTER OR OTHER PLAN		0829	

CHARACTERISTICS OF STUDENT BODY 39

STUDENT BODY ALL MEN		1200
STUDENT BODY ALL WOMEN		1201
STUDENT BODY COEDUCATIONAL OR COORDINATE		1202
STUDENT ORIENTATION INCLINES TOWARD THE SCHOLARLY & INTELLECTUAL	Q44.1	1203
STUDENT ORIENTATION INCLINES TOWARD SOCIAL AND PERSONAL DEVELOPMENT	Q44.2	1204
STUDENT ORIENTATION INCLINES TOWARD CONGENIALITY	Q44.3	1205
STUDENT ORIENTATION INCLINES TOWARD PRACTICALITY	Q44.4	1206
OVER FORTY PERCENT OF CLASS RECENTLY ENROLLED GRADUATED IN TOP FIFTH OF SECONDARY SCHOOL CLASS	Q37 (3+4)	1207
OVER TWENTY PERCENT OF CLASS RECENTLY ENROLLED GRADUATED IN TOP FIFTH OF SECONDARY SCHOOL CLASS	Q37 (2+3+4)	1208
CEEB MEAN SCORE FOR RECENT FRESHMAN CLASS ON VERBAL SECTION OF SAT WAS OVER 400	Q38 (2+3+4+5)	1209
CEEB MEAN SCORE FOR RECENT FRESHMAN CLASS ON VERBAL SECTION OF SAT WAS OVER 500	Q38 (3+4+5)	1210
CEEB MEAN SCORE FOR RECENT FRESHMAN CLASS ON VERBAL SECTION OF SAT WAS OVER 600	Q38 (4+5)	1211
CEEB MEAN SCORE FOR RECENT FRESHMAN CLASS ON VERBAL SECTION OF SAT WAS OVER 650	Q38 (5)	1212
CEEB MEAN SCORE FOR RECENT FRESHMAN CLASS ON MATHEMATICAL SECTION OF SAT WAS OVER 400	Q39 (2+3+4+5)	1213
CEEB MEAN SCORE FOR RECENT FRESHMAN CLASS ON MATHEMATICAL SECTION OF SAT WAS OVER 500	Q39 (3+4+5)	1214
CEEB MEAN SCORE FOR RECENT FRESHMAN CLASS ON MATHEMATICAL SECTION OF SAT WAS OVER 600	Q39 (4+5)	1215

CEEB MEAN SCORE FOR RECENT FRESHMAN CLASS ON MATHEMATICAL SECTION OF SAT WAS OVER 650	Q39 (5)	1216
ACT MEAN COMPOSITE SCORE FOR RECENT FRESHMAN CLASS 12 OR OVER	Q40 (2+3+4+5)	1217
ACT MEAN COMPOSITE SCORE FOR RECENT FRESHMAN CLASS 16 OR OVER	Q40 (3+4+5)	1218
ACT MEAN COMPOSITE SCORE FOR RECENT FRESHMAN CLASS 21 OR OVER	Q40 (4+5)	1219
ACT MEAN COMPOSITE SCORE FOR RECENT FRESHMAN CLASS 26 OR OVER	Q40 (5)	1220
AS MANY AS ONE FOURTH OF WOMEN GRADUATES ENTER GRADUATE STUDY	Q55 (2+3)	1221
AS MANY AS ONE HALF WOMEN GRADUATES ENTER GRADUATE STUDY	Q55 (3)	1237
AS MANY AS ONE HALF MEN GRADUATES ENTER GRADUATE STUDY	Q56 (3)	1222
MORE THAN ONE FOURTH MEN GRADUATES ENTER GRADUATE STUDY	Q56 (2+3)	1236
LESS THAN TWENTY PERCENT TOTAL ENROLLMENT ARE GRADUATE STUDENTS	Q54 (1+2+3)	1223
FORTY PERCENT OR MORE BELONG TO SOCIAL FRATERNITIES OR SORORITIES	Q43(5+6)	1224
SEEKS A GEOGRAPHICALLY DIVERSE STUDENT BODY	Q46.1	1225
MORE THAN ONE HALF OF THE STUDENT BODY COMMUTING DAY STUDENTS	Q45.1	1226
NO RESIDENTIAL FACILITIES AVAILABLE	Q42.7	1227
RESIDENTIAL FACILITIES ON CAMPUS FOR WOMEN ONLY	Q42.5	1228
RESIDENTIAL FACILITIES ON CAMPUS FOR MEN ONLY	Q42.6	1238
ALL OR ALMOST ALL RESIDENTIAL FACILITIES ARE ON CAMPUS	Q42.1	1229
FRATERNITIES HAVE HOUSING FACILITIES	Q42.3	1230
SORORITIES HAVE HOUSING FACILITIES	Q42.4	1231
OVER SIXTY PER CENT OF A RECENT FRESHMAN CLASS RETURNED THE SECOND YEAR	Q41(3+4+5+6)	1232

OVER EIGHTY PER CENT OF A RECENT FRESHMAN CLASS RETURNED THE SECOND YEAR	Q41 (5+6) 1235
HALF OR MORE MEN GRADUATES FROM THESE JUNIOR COLLEGES GO ON FOR HIGHER EDUCATION	Q58 (3) 1233
HALF OR MORE WOMEN GRADUATES FROM THESE JUNIOR COLLEGES GO ON FOR HIGHER EDUCATION	Q57 (3) 1234

CHARACTERISTICS OF FACULTY 3

MORE THAN HALF THE FACULTY MEMBERS HAVE THEIR DOCTORATES	Q35(3+4) 1100
MORE THAN ONE FOURTH THE FACULTY MEMBERS HAVE THEIR DOCTORATES	Q35(2+3+4)1101
MORE THAN THREE FOURTHS THE FACULTY MEMBERS HAVE ADVANCED DEGREES	Q36(4) 1102

DEGREE MAJOR AVAILABLE IN 57

AGRICULTURE: GENERAL	0900
AGRICULTURE: AGRONOMY; FOOD TECHNOLOGY; HORTICULTURE; HUSBANDRY; MANAGEMENT OF FARM, DAIRY, WILDLIFE; SOILS	0901
ARCHITECTURE	0902
BIOLOGICAL SCIENCES: BIOLOGY, GENERAL	0903
BIOLOGICAL SCIENCES: BOTANY OR ZOOLOGY, GENERAL	0904
BIOLOGICAL SCIENCES: PREMEDICAL, PREDENTAL, PREVETERINARY, OPTOMETRY (PRE-PROFESSIONAL)	0905
BIOLOGICAL SCIENCES: ANATOMY, BACTERIOLOGY, ENTOMOLOGY, GENETICS, NUTRITION, PHYSIOLOGY, PLANT PATHOLOGY, PLANT PHYSIOLOGY	0906
BIOLOGICAL SCIENCES: BIOCHEMISTRY, BIOPHYSICS	0907
BUSINESS AND COMMERCE: GENERAL	0908
BUSNIESS AND COMMERCE: ACCOUNTING	0909
BUSNIESS AND COMMERCE: HOTEL AND RESTAURANT ADMINISTRATION	0910
BUSINESS AND COMMERCE: SECRETARIAL STUDIES	0911
EDUCATION: NURSERY, KINDERGARTEN, EARLY CHILDHOOD, ELEMENTARY	0912
EDUCATION: SECONDARY, COMBINED ELEMENTARY & SECONDARY	0913

EDUCATION: FINE & APPLIED ARTS (ART, BUSINESS & COMMERCE, HOME ECONOMICS, MUSIC, PHYSICAL, RECREATION, HEALTH, INDUSTRIAL & INDUSTRIAL ARTS, AGRICULTURE, GENERAL)	0914
EDUCATION: EXCEPTIONAL & ATYPICAL, SPEECH CORRECTION	0915
ENGINEERING	0916
ENGLISH, LITERATURE & JOURNALISM	0917
FINE AND APPLIED ARTS: GENERAL	0918
FINE AND APPLIED ARTS: ART	0919
FINE AND APPLIED ARTS: MUSIC	0920
FINE AND APPLIED ARTS: SPEECH & DRAMATIC ARTS	0921
FOREIGN LANGUAGES: GENERAL, LINGUISTICS, PHILOLOGY	0922
FOREIGN LANGUAGES: CLASSICAL, ORIENTAL, EXOTIC (GREEK, LATIN, CHINESE, HEBREW, HINDU, JAPANESE, URDU)	0923
FOREIGN LANGUAGES: MODERN (FRENCH, GERMAN, ITALIAN, PORTUGUESE, RUSSIAN, SPANISH)	0924
FORESTRY	0925
GENERAL PROGRAM OF STUDIES: ARTS & SCIENCES	0927
GEOGRAPHY	0929
HEALTH PROFESSIONS: GENERAL, CHIROPODY, DENTAL HYGIENE, HOSPITAL ADMINISTRATION, OCCUPATIONAL THERAPY, PUBLIC HEALTH	0930
HEALTH PROFESSIONS: MEDICAL TECHNOLOGY, RADIOLOGIC TECHNOLOGY	0931
HEALTH PROFESSIONS: NURSING OR PUBLIC HEALTH NURSING	0932
HEALTH PROFESSIONS: PHARMACY	0933
HEALTH PROFESSIONS: PHYSICAL THERAPY	0934
HISTORY	0935

HOME ECONOMICS: GENERAL	0936	10
HOME ECONOMICS: CHILD DEVELOPMENT, CLOTHING & TEXTILES, FOODS & NUTRITION, INSTITUTIONAL MANAGEMENT, FAMILY RELATIONS	0937	
LAW	0938	
LIBRARY SCIENCE	0939	
MATHEMATICAL SUBJECTS: MATHEMATICS AND STATISTICS	0940	
MILITARY, NAVAL OR AIR SCIENCE; MERCHANT MARINE DECK OFFICER	0941	
PHILOSOPHY, SCHOLASTIC PHILOSOPHY	0942	
PHYSICAL SCIENCES: GENERAL	0943	
PHYSICAL SCIENCES: CHEMISTRY, PHARMACEUTICAL CHEMISTRY	0944	
PHYSICAL SCIENCES: PHYSICS	0945	
PHYSICAL SCIENCES: EARTH SCIENCES (GENERAL, GEOLOGY, GEOPHYSICS, OCEANOGRAPHY)	0946	
PHYSICAL SCIENCES: ASTRONOMY, METALLURGY, METEOROLOGY	0947	
PSYCHOLOGY	0948	
RELIGION: GENERAL & LIBERAL ARTS, RELIGIOUS EDUCATION, THEOLOGY	0949	
SOCIAL SCIENCES: GENERAL	0950	
SOCIAL SCIENCES: AMERICAN CIVILIZATION	0951	
SOCIAL SCIENCES: ANTHROPOLOGY	0952	
SOCIAL SCIENCES: ECONOMICS	0953	
SOCIAL SCIENCES: INTERNATIONAL RELATIONS, AREA & REGIONAL STUDIES	0954	
SOCIAL SCIENCES: POLITICAL SCIENCE OR GOVERNMENT	0955	

SOCIAL SCIENCES: SOCIOLOGY	0956
SOCIAL SCIENCES: APPLIED (GENERAL, AGRICULTURAL ECONOMICS, FOREIGN SERVICE, INDUSTRIAL RELATIONS, PUBLIC ADMINISTRATION, SOCIAL WORK)	0957
TRADE AND INDUSTRIAL TRAINING	0958

OCCUPATIONAL PROGRAMS AVAILABLE IN 16

AGRICULTURE AND FORESTRY	1000
AERONAUTICAL TECHNOLOGY	1001
CHEMICAL TECHNOLOGY	1002
CIVIL AND ARCHITECTURAL TECHNOLOGY	1003
ELECTRICAL AND ELECTRONIC TECHNOLOGY	1004
INDUSTRIAL, MECHANICAL AND INSTRUMENTATION TECHNOLOGY	1005
HEALTH SERVICES	1006
SCIENTIFIC DATA PROCESSING	1007
BUSINESS AND COMMERCE	1008
EDUCATION	1009
JOURNALISM	1010
APPLIED, FINE AND GRAPHIC ARTS	1011
HOME ECONOMICS	1012
LIBRARY TECHNOLOGY	1013
BIBLE STUDY	1014
FIRE PROTECTION AND POLICE TECHNOLOGY	1015

APPENDIX IV

Colleges Not Responding To Questionnaire

Alabama A & M College
Daniel Payne College, Alabama
Huntingdon College, Alabama
Livingston State College, Alabama
Alaska Methodist University
Agricultural, Mechanical and Normal College, Arkansas
Arkansas College
Ouachita Baptist College, Arkansas
Shorter College, Arkansas
Southern Baptist College, Arkansas
Armstrong College, California
Art Center School, California
Bakersfield College, California
California Concordia College
California Lutheran College
California Western University
Chaffey College, California
College of the Siskiyous, California
Dominican College San Rafael, California
Glendale College, California
Heald Engineering College, California
La Sierra College, California
Long Beach City College, California*
Los Angeles Baptist College & Theological Seminary
Montrey Institution for Foreign Study, California
Monterey Peninsula College, California
Mount San Antonio College, California
Pacific Oaks College, California
Pepperdine College, California
Riverside City College, California
St. Marys College-California
San Diego College for Women
San Jose State College, California
Shasta College, California
Whittier College, California
Regis College, Colorado
Central Conn. State College, Conn.
Danbury State College, Conn.
Mitchell College, Conn.
St. Joseph College, Conn.
Immaculata Junior College, Washington, D. C.
Central Florida Junior College, Florida
Edwards Waters College, Florida
Embry-Riddle Aero Institute, Florida
Gibbs Junior College, Florida
Johnson Junior College, Florida

Lincoln Junior College, Florida
Palm Beach Junior College, Florida
Roosevelt Junior College, Florida
Washington Junior College, Florida
Agnes Scott College, Georgia
La Grange College, Georgia
American Conservatory of Music, Illinois
Centralia Junior College, Illinois
Cosmopolitan School of Music, Illinois
Devry Technological Institute, Illinois
George Williams College, Illinois
Morton Junior College, Illinois
Mundelein College, Illinois
St. Josephs Seminary, Illinois
Valparaiso University, Indiana
Clinton Junior College, Iowa
Emmetsburg Community College, Iowa
Fort Dodge Community College, Iowa
Keokuk Community College, Iowa
Webster City Junior College, Iowa
El Dorado Junior College, Kansas
Hutchinson Junior College, Kansas
St. Johns College, Kansas
University of Kansas
Lees Junior College, Kentucky
Midway Junior College, Kentucky
St. Catharine Junior College, Kentucky
Western Kentucky State College
Auburn Maine School of Commerce, Maine
Northern Conservatory of Music, Maine
Anne Arundel Community College, Maryland
Baltimore College of Commerce
Baltimore Junior College
Bowie State College, Maryland
Eastern College, Maryland
Frostburg State College, Maryland
Ner Israel Rabbinical College, Maryland
Peabody Institute of Baltimore
St. Marys Seminary & Junior College, Maryland
University of Baltimore
University of Maryland State College
Berkshire Community College, Massachusetts
Bouve Boston School, Mass.
Bradford Durfee College of Technology, Mass.
Cambridge Junior College
Cardinal Cushing College, Mass.
Garland Junior College, Mass.
New England Conservatory of Music, Mass.
Perry Normal School, Mass.
Queen Apostles College & Seminary, Mass.
St. Columbans College & Seminary, Mass.
St. Hyacinth College and Seminary, Mass.
State College at Lowell, Mass.
Worcester Junior College
Cleary College, Michigan

Cranbrook Academy of Art, Michigan
Delta College, Michigan
Detroit Business Institute
Detroit Institute of Musical Art
Duns Scotus College, Michigan
Merrill Palmer Institute, Mich.
Western Michigan University
Ely Junior College, Minnesota
Northwestern Lutheran Theological Seminary, Minn.
Clarke Memorial College, Miss.
Copiah Lincoln Junior College, Miss.
East Mississippi Junior College
Gulf Park College, Miss.
Itawamba Junior College, Miss.
J. P. Campbell College, Miss.
Meridian Municipal Junior College, Miss.
Mississippi Indua College
Mississippi State College for Women
Natchez Junior College, Miss.
Okolona College, Miss.
Prentiss Norm Industrial Institute, Miss.
Rust College, Miss.
Saints Junior College, Miss.
Southwestern Mississippi Junior College
T J Harris Junior College, Miss.
Central Bible Institute, Mo.
Eden Theological Seminary, Mo.
Harris Teachers College, Mo.
Joplin Junior College, Mo.
Kansas City College of Osteopathy, Mo.
Mercy Junior College, Mo.
Missouri Valley College
Moberly Junior College
National College, Mo.
St. Joseph Junior College, Mo.
St. Pauls College, Mo.
Trenton Junior College, Mo.
William Woods College*
Custer County Junior College, Montana
Grace Bible Institute, Neb.
Municipal University of Omaha
Don Bosco College, New Jersey
Monmouth College, N. J.
Rutgers The State University, N.J.
Shelton College, N. J.
New Mexico Highlands University, New Mexico
Biblical Seminary in New York
Colgate Rochester Divinity School, N. Y.
Concordia Junior College, N. Y.
Immaculata College, N. Y.
Iona College, N. Y.
Mannes College of Music, N. Y.
Maria College of Albany, New York
Mohawk Valley Technological Institute, N. Y.

Nazareth College of Rochester
New York Institute of Technology
St. Thomas Aquinas College, N. Y.
Sarah Lawrence College, New York
Suny at Postsdam, New York
Suny at Stony Brook, New York
Suny at Buffalo
Elizabeth City State College, North Carolina
Guilford College, North Carolina
High Point College, North Carolina
Lees Mcrae College, N. C.
Mecklenburg College, N. C.
North Carolina College at Durham
North Carolina Wesleyan College, Inc.
Oak Ridge Military Institute, N. C.
Peace College, North Carolina
Piedmont Bible College, Inc., North Carolina
Sacred Heart Junior College and Academy, N. C.
Bismarck Junior College, North Dakota
Minot State College, North Dakota
Wilberforce University, Ohio
Northern Oklahoma Junior College
Oklahoma Christian College
Oklahoma School of Business, Accounting, Finance and Law
Poteau Community College, Oklahoma
Seminole Junior College, Oklahoma
Cascade College, Oregon
Mount Angel College, Oregon
Multnomah College, Oregon
Museum Art School, Oregon
Warner Pacific College, Oregon
Christ the Saviour Seminary, Penn.
Combs College of Music, Pa.
Del Val College of Science and Agriculture, Penn.
Kilroe Seminary Sacred Heart, Penn.
Kutztown State College, Penn.
Mary Immaculate Seminary, Penn.
Pennsylvania Military College
Philadelphia College of Osteopathy
St. Charles Borromeo Seminary, Penn.
St. Fidelis College & Seminary, Penn.
Seminary of our Lady of Prov. Rhode Island
Allen University, South Carolina
Morris College, South Carolina
North Greenville Junior College, S.C.
Freeman Junior College, South Dakota
Presentation Junior College, S. D.
Sioux Falls College, S. D.
Cumberland College of Tennessee
George Peabody College for Teachers, Tenn.
Milligan College, Tenn.
Morristown College, Tenn.
Trevecca Nazarene College, Tenn.
William J. Bryan College, Tenn.

Alvin Junior College, Texas
Blinn College, Texas
Decatur Baptist College, Texas
Kilgore College, Texas
Lubbock Christian College, Texas
McMurry College, Texas
Panola County Junior College, Texas
St. Philips College, Texas
Stephen F. Austin State College, Texas
Texas Womans University
Tyler Junior College, Texas
Latter-Day Saints Business College, Utah
Stevens Henager College, Utah
Goddard College, Vermont
Apprentice School, Virginia
Eastern Mennonite College, Virginia
Virginia Southern College
Virginia Theological Seminary and College
Highline College, Washington
Northwestern College, Washington
Pacific Lutheran University, Washington
Seattle Pacific College
University of Puget Sound, Washington
Alerson Broaddus College, West Virginia
Bluefield State College, West Virginia
Fairmont State College, West Virginia
Greenbrier College, West Virginia
Barron County Teachers College, Wisconsin
Buffalo County Teachers College, Wisconsin
Columbia County Teachers College
Door Kewaunee County Teachers College, Wis.
Edgewood College of the Sacred Heart, Wis.
Immaculate Conception College, Wis.
Juneau County Teachers College, Wis.
Langlade County Teachers College, Wis.
Marinette County Teachers College, Wis.
Milton College, Wis.
Polk County Teachers College, Wis.
Sauk County Teachers College, Wis.
Sheboygan County Teachers College, Wis.
Vernon County Teachers College, Wis.
Wisconsin Conservatory, Inc., Wis.
Western Wyoming Junior College, Wyoming
U. S. Army Language School, Calif.
Inter American University of Puerto Rico

APPENDIX V.

For further information:
Robert Lefley
492-500 (312)

December 8, 1965

IMMEDIATE

A New and Simple Device That Will Tell a High School Counselor In a Few Minutes Which of More Than 2,000 Colleges Best Fit a Student's Needs is Being Developed At Northwestern University

Countless lifetime decisions are made by high school students and their counselors on the basis of meagre information pieced together from a few college bulletins.

Too often, this "search" leaves little time for serious discussion about basic aims and the close matching of a college's many characteristics with the needs and desires of the student. This is especially true when the student's requirements are out of the ordinary.

A simple device that will tell the counselor in a few minutes which of 2,160 universities, colleges, and junior colleges best fit the student's requirements is now being developed at Northwestern University.

Called the College Suggestor, the device is being developed by Northwestern under a $55,077 grant from the U. S. Office of Education and in cooperation with the Educational Testing Service, Princeton, N. J.

Plans call for a prototype of the College Suggestor to be completed this winter and to be tested in 1966, and for production models to be made available in 1967. The price probably will be under $50.00

Not only will the College Suggestor help to put most of the country's colleges and universities into the selection process, but it will also increase the student's choice of characteristics from the usual three or four to a possible 220.

"We see the College Suggestor as a valuable tool for collegebound students, counselors, and ultimately for research in the field of higher education," said B. Claude Mathis, professor of education and psychology and assistant dean of the Graduate School at Northwestern University.

Mathis is the principal investigator under the Office of Education grant for the College Suggestor, which will be developed in cooperation with Wesley W. Walton, director of developmental programs for the Educational Testing Service.

APPENDIX V. (continued)

"By providing for much more rapid examination of data about colleges than you can obtain through the usual types of school bulletins, the College Suggestor will save valuable time which the counselor will be able to use in a close examination of the specific problems of college selection with the individual student," said Mathis.

"Our hope," he said, "is that the use of the device will also encourage counselors to examine colleges from the standpoint of multiple characteristics rather than from the usual approach of only a few. Repeated use will tend to increase the range of colleges and characteristics that the counselor is familiar with."

The College Suggestor utilizes the technique of optical coincidence, which has previously not been used for this purpose, according to Mathis.

The device consists of plastic cards the size of a sheet of typing paper. Each card represents a single characteristic or category such as "tuition under $1,000." All 2,160 colleges are represented on each card.

When a specific college has the characteristic represented by the card, there is a clear space on the card at that college's permanent position. If it does not have the characteristic, the space is opaque.

To retrieve data from the College Suggestor, individual cards representing the desired characteristics are selected form the pack of 220 cards. These are superimposed one on the other.

Where spaces on the cards are coincident, points of light are visible. These dots of light represent colleges having all the desired characteristics. In the spaces, reference numbers are printed. These numbers identify specific colleges in an accompanying code book.

The ease with which the College Suggestor is used is suggested by this example:

The student wants a college with library science as a major field (1), located in the Midwest (2), where aid is available (3), a coeducational institution (4), with tuition charges under $1,000 (5), in a suburban community (6), with an enrollment between 1,000 and 2,499 (7), having a low student-faculty ratio (8), and where 75 percent of the faculty have Ph.D.'s (9).

The cards representing the nine characteristics are stacked together and reveal through the dots of light those colleges that meet these requirements. The process takes a couple of minutes at the most.

Mathis said that by the time the College Suggestor is put into production it may offer as many as 300 to 350 characteristics in contrast to the prototype's 220.

Data on the 2,160 colleges is being gathered from a number of sources including principally the annual surveys of the U. S. Office of Education and a questionnaire being sent to each of the colleges.

The Educational Testing Service already has begun a thorough search of educational literature to determine college characteristics that are usable and available.

The College Suggestor will incorporate an up-dating feature consisting of cards not yet programmed, said Mathis, who sees the device as a further attempt to introduce efficiency into the educational process.

EDUCATION U.S.A.
A Special Weekly Report on Educational Affairs

Dateline: Washington, D.C.
December 16, 1965

THE EVANSTON REVIEW Thursday, December 16, 1965

Device to Simplify Student Choice of College Being Developed

Newark Evening News
NEWARK, N. J.
D. 282,761 SUN. 437,018

MAR 5 1966

Aid Coming On College

Device to Assist in Better Choosing Is Due in '67

Countless lifetime decisions are made by high school students and their counselors on the basis of meager information pieced together from a few college bulletins.

Too often, this "search" leaves little time for serious discussion about basic aims and the close matching of a college's many characteristics with the needs and desires of the student. This is especially true when the student's requirements are out of the ordinary.

A simple device that will tell the counselor in a few minutes which of 2,160 universities, colleges and junior colleges best fit the student's requirements is now being developed at Northwestern University.

How It Works

The College Suggestor utilizes the technique of optical coincidence, which has previously not been used for this purpose, according to Mathis.

The device consists of plastic cards the size of a sheet of typing paper. Each card represents a single characteristic or category, such as "tuition under $1,000." All 2,160 colleges are represented on each card.

When a specific college has the characteristic represented by the card, there is a clear space on the card at that college's permanent position. If it does not have the characteristic, the space is opaque.

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Where spaces on the cards are coincident, points of light are visible. These dots of light represent colleges having all the desired characteristics.

Plans call for a prototype of the College Suggestor to be completed and tested this year, and for production models to be made available in 1967. The price will probably be under $50.

Not only will the College Suggestor help to put most of the country's colleges and universities into the selection process, it will also increase the student's choice of characteristics from the usual three or four to a possible 220.

"We see the College Suggestor as a valuable tool for college-bound students, counselors, and ultimately for research in the field of higher education," said B. Claude Mathis, professor of education and psychology and assistant dean of the Graduate School at Northwestern.

"By providing for much more rapid examination of data about colleges than you can obtain through the usual types of school bulletins, the College Suggestor will save valuable time which the counselor will be able to use in a close examination of the specific problems of college selection with the individual student," said Mathis.

Minneapolis Tribune
MINNEAPOLIS, MINN.
D. 221,120 SUN. [illegible]

DEC 27 1965

Chicago's AMERICAN
Always on Top of the News
D. 436,505 SUN. 527,749

DEC 9 1965

Device Picks College of Your Choice

A device intended to simplify choosing a college for high school seniors is being developed at Northwestern university under a grant from the federal office of education.

The device consists of plastic cards listing characteristics of

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THE CHRISTIAN SCIENCE MONITOR Friday, December 24, 1965 7

EDUCATION

College selector aid

By a staff writer of The Christian Science Monitor

The Boston Globe
D. [illegible]

DEC 26 1965

ASBURY PARK [illegible]
ASBURY [illegible]

JAN 10 1966

WALL STREET JOURNAL
December 10, 1965

Educators Developing Device That Suggests A College to Attend

* * *

Cards and Light Speedily Show Which Institutions Have All The Traits Applicant Seeks

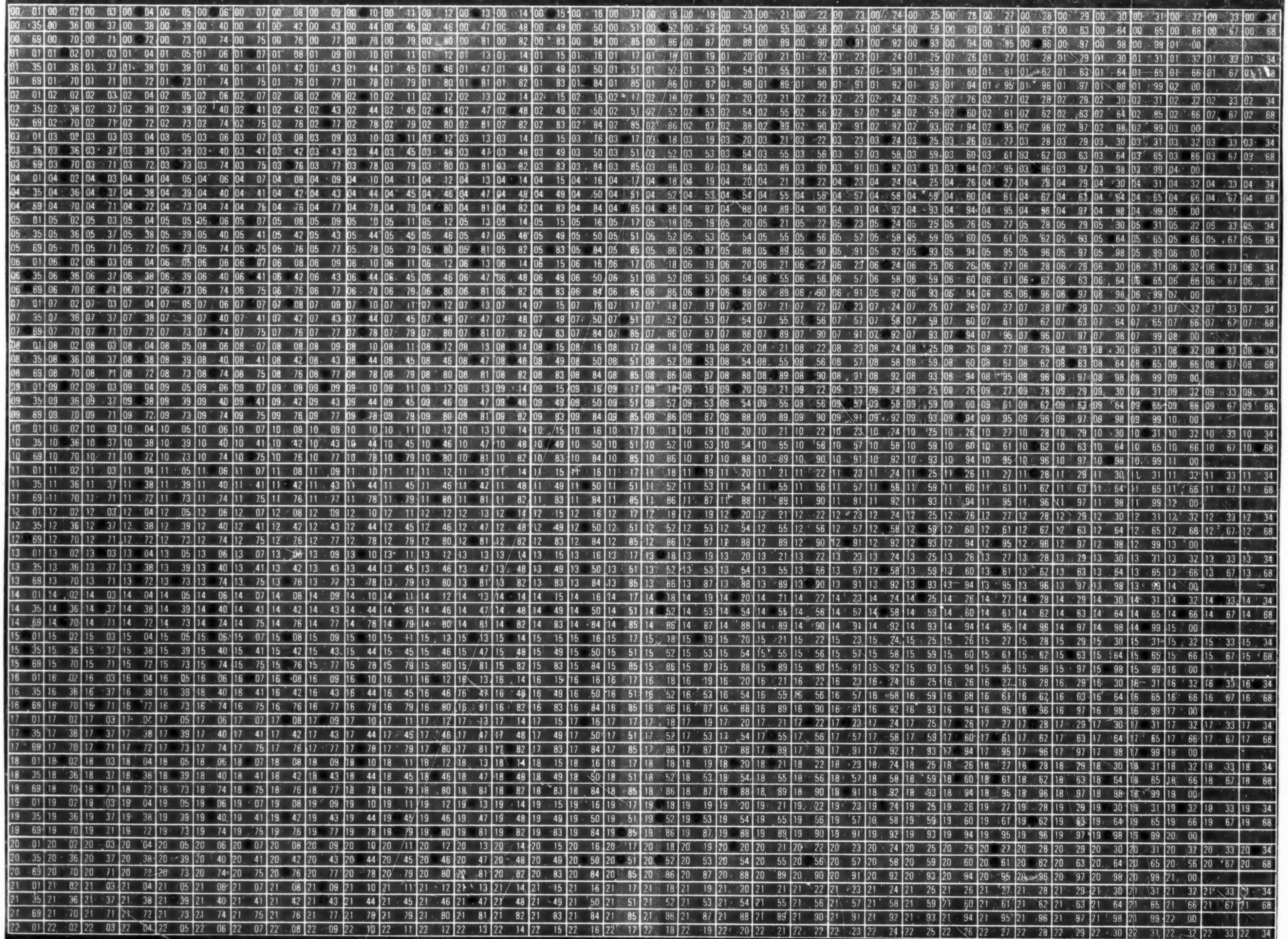
By a WALL STREET JOURNAL Staff Reporter

CHICAGO—Where to apply for college—that often bewildering decision for many high school students—soon may be almost painless, thanks to a simple device under development at Northwestern University.

▶ A device to assist guidance counselors in matching characteristics of various colleges with the needs and desires of potential students is under development at Northwestern U. with the aid of a $55,077 federal grant. Called the "College Suggestor," it will offer, for most of the nation's colleges, some 220 characteristics ("tuition under $1,000," "low student-faculty ratio," "library science a major field," etc.). The student makes his choice among these and within minutes gets a list of colleges which meet his needs. A prototype is to be completed this winter and production models will be offered for less than $50 in 1967.

Appendix E

ENROLLMENT BETWEEN 600 AND 999



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